

“Zero-COVID policy and stock market sectoral performance in China”

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ZERO-COVID POLICY AND STOCK MARKET SECTORAL PERFORMANCE IN CHINA

Abstract

With the outbreak of COVID-19, the Chinese government implemented the “zero-COVID” policy as a measure to curb the spread of the virus. The different measures of the policy include widespread testing, contact tracing, and strict quarantine and isolation protocols. In view of recent changes in COVID-19 trends and other economic indicators, the Chinese government withdrew significant provisions of the zero-COVID policy in China. The present study investigates the sectoral performance of the Chinese stock market after the withdrawal of the zero-COVID policy. The study considers eighteen sectoral indices of the Shenzhen Stock Exchange of China as a sample and applies the event study methodology to study the impact of the policy withdrawal on the stock prices performance. The results of the study indicate that sectors such as hotel, consumer staples, the financial sector, real estate, media, and culture have reported significant positive movement after the withdrawal of the zero-COVID policy, while other sectors such as consumer discretionary, energy, healthcare, information technology, manufacturing, mining, technology, telecom, transportation, utilities, wholesale, and retail have shown insignificant reactions. These results also indicate that when the COVID-19 outbreak happened in China, different sectors of the economy reacted negatively except the retail and wholesale sectors, while with the withdrawal of the zero-COVID policy by the Chinese government, the reaction of investors is optimistic as different sectors are reporting either positive reactions in the stock price movement or no reaction.

Keywords

zero-COVID, event study, sectoral analysis, Chinese stock market, behavioral finance

JEL Classification

G01, G10, G14, G40

INTRODUCTION

China’s “zero-COVID” policy refers to the government’s efforts to stop the COVID-19 virus from spreading and control it at the earliest. This policy has included measures such as widespread testing, contact tracing, and strict quarantine and isolation protocols. In the early stages of the novel coronavirus outbreak in China, some analysts believed that the implementation of the zero-COVID policy was successful and it has helped to achieve rapid recovery of China’s economy and also resulted into positive impact on the stock markets. It is worth mentioning that China’s stock market, like many other markets, has been volatile in recent years, fluctuating in response to various global and domestic events. Thus, it is hard to make a direct link between the zero-COVID policy and the stock market performance. The stock market often reacts negatively to news of outbreaks or other negative developments related to the pandemic. If a large-scale outbreak occurs, it could lead to a decline in economic activity and consumer confidence, which would likely have a negative effect on the stock market. However, it is worth mentioning that the stock market is a forward-looking indicator, and a lot of factors like global economic conditions, interest rates, and so on can affect the market as well.

In view of the various protests made by the Chinese population, China announced to withdrawal of the zero-COVID policy on December 7, 2022. This has resulted in relaxed norms for travel, testing and isolation protocols. For the businesses, it is a welcome step as with lesser restrictions, the businesses are expected to experience more flexibility after more than two years of the implementation of the policy and may yield into better financial outcomes.

Conventional economic and financial theory says that factors related to the market and the company have the most effect on stock prices. Generally speaking, the macroeconomic conditions and regulatory and policy environments that affect businesses in the same industry are similar. Companies in the same industry tend to experience similar challenges when the economy undergoes shifts (Moskowitz & Grinblatt 1999). The theory of behavioral finance states that investors' psychological and behavioral factors, in addition to the fundamental value of stocks, will have a significant impact on stock prices during times of crisis. According to Lee and Jiang (2002), earnings volatility can be reduced by an optimistic outlook from investors, while it can be increased by a pessimistic outlook. Therefore, the withdrawal of zero-COVID policy will also affect the economic environment and result into changes in the investors' sentiments and changes in the stock prices of the stocks and indices. Due to the withdrawal of the policy, the cases are bound to rise in China and this will result into a surge in financial sector risks. This will have a varying degree of impact on various sectors, and these sectors react differently (Yang et al. 2020).

This paper looks at how the withdrawal of the zero-COVID policy has affected different sectors of the Chinese stock market. The study considers the standard event study methodology to assess the sectoral performance of stock markets in China after the withdrawal of the policy.

1. LITERATURE REVIEW

COVID-19 has spread quickly around the world, and its effects have been worse than those of any other infectious disease pandemic in recent years. The global influenza pandemic that occurred in 1918-1919 was the most similar to the current COVID-19 pandemic, which is currently ongoing. About 40 million people perished in that year-long pandemic that infected a third of the world's population. More than 80 million people could die from COVID-19 if it spreads like the global influenza pandemic did, which it is expected to do due to the increased population and easier availability of communication (Ayittey et al., 2020; Dhar et al., 2020; Fernandes, 2020).

Investor behavior during emergencies, such as natural disasters, pandemics, or geopolitical events, can have a significant impact on investor sentiment in the capital markets (Malmendier & Nagel, 2011). This impact can result in fluctuations in stock prices, bond yields, and currency exchange rates (Brown & Cliff, 2004). Investor sentiment is influenced by various factors, including attention and news (Barber & Odean, 2008) and nonlinear pandemic dynamics (Baker et al., 2020). During the COVID-19 pan-

dem, for example, investor behavior was found to drive stock market volatility in China (Cao et al., 2021; Endri et al., 2021). These studies suggest that investors' previous experiences and emotions can affect their risk-taking behavior during emergencies, leading to changes in the financial markets.

An event study is a type of research that looks at how a certain event affects the financial markets. The event can be anything from a company's earnings announcement to a change in government policy or a natural disaster. Event studies typically focus on the effect of the event on security prices, but they can also look at trading volumes, volatility, and other market indicators. One of the best-known event studies was conducted by Fama et al. (1969) to examine the impact of the Kennedy assassination on the stock market. The study found that the assassination had a significant negative effect on stock prices on the day it occurred but did not have a lasting impact. Another example is a study by Barber and Odean (2008) that looked at the impact of individual investors' trading behavior on stock returns. The study found that individual investors who traded frequently underperformed the market and that their behavior could explain a significant portion of the so-called "small firm effect."

More recently, researchers have used event studies to analyze the impact COVID-19 pandemic using event study method on financial markets (Alfaro et al., 2020). Event studies are an important tool for understanding the impact of specific events on financial markets. They can help investors, analysts, and policymakers make more informed decisions by providing insights into how markets react to different types of news and events.

COVID-19, a pandemic virus that threatens human health on a global scale, hurts the global economy in a big way and for a long time (Iyke, 2020). Mei-Ping et al. (2018) investigated the effects of SARS on Asian financial markets. Narayan and Phan (2020) investigated the effects of COVID-19 on stock markets and national responses. The effects of COVID-19 on the aviation industry and employment were studied by Sobieralski (2020). Many stocks on the A-share market in China have hit all-time lows, and the US stock market has seen four consecutive record-breaking drops. Stock market losses caused by COVID-19 have made risk management more challenging (Guidolin et al., 2019; Laura et al., 2016). However, the existing literature on the impact of COVID-19 on stock prices is scant, and there are sector-specific constraints on the economic significance of COVID-19 (Reilly 2020; Saadat et al., 2020). Specifically, Qin et al. (2020) examined how the pandemic affected the price of oil. Ali et al. (2020) analyzed how COVID-19 affected a variety of financial instruments, compared the situation in China to that in other countries, but paid less attention to the heterogeneity of the industry as a whole. Liu et al. (2020) examined how the outbreak of COVID-19 affected the price of crude oil and the value of stocks in the United States. Here, we examined how the stock prices of various industries responded to the pandemic by looking at how they fluctuated during the pandemic window. Gao et al. (2022) compared the initial impact of COVID-19 on both US and Chinese market and concluded that with the significant rise in the COVID cases during the initial phase of pandemic outbreak but it become stable in long run. He et al. (2020b) studied the same in seven different countries including US and China and concluded the similar outcomes. Shaik and Padmakumari (2022) tried to assess the impact of COVID-19 on value at risk framework in BRICS economies and reported significant impact.

Several studies have shown the benefits of sector-wise analysis using event studies. The study by Kallinterakis et al. (2021) found that while most sectors experienced negative impacts, some sectors, such as healthcare and pharmaceuticals, saw positive impacts. He et al. (2020a) tries to assess the performance of different sectors of Chinese economies after the spread of coronavirus and found that different sectors including the transportation, electricity have witnessed negative impact while the healthcare, IT and education has witnessed positive impact. The unidirectional causality from the COVID-19 cases to the performance of stock markets was confirmed by Li et al. (2021) and Liu et al. (2021).

In view of the review of the existing literature, there is strong need to assess the impact of withdrawal of zero-COVID policy on the performance of Chinese stock market. There is also a requirement to assess the sectoral performance of the Chinese economy post this policy change so that the appropriate decisions can be taken by the Chinese government and the interest of the general public and stock market investors can be protected. This study tries to fill this gap by conducted in-depth empirical analysis of the impact of withdrawal of zero-COVID policy on the performance of eighteen sectoral indices of the Chinese stock market.

2. METHOD

The study deploys the daily closing price of the eighteen sectoral indices of the Shenzhen Stock Exchange of China. The sample includes sectoral indices such as Construction, Discretionary, Consumer Staple, Culture, Energy, Financial, Healthcare, Hotel, IT, Manufacturing, Media, Mining, Real Estate, Technology, Telecom, Transportation, Utilities, and Wholesale and Retail. The SZSE index, representative of 500 stocks listed on the Shenzhen Stock Exchange, is selected as the benchmark for the market index of the Chinese economy. The selection of the sample was in line with the previous studies of He et al. (2020a) and Xu et al. (2021), which considered different market indices to assess the impact of COVID-19 on the performance of the sectoral indices of the Chinese market. The daily time series data of the sample indices was collect-

ed from the Investing.com financial database for the period of June 1, 2022, to January 19, 2022.

The study uses the event study method originally proposed by Ball and Brown (1968) to assess the impact of withdrawal of the zero-COVID policy on the Chinese stock market. The methodology has been extensively used by the researchers to assess the impact of some specific event on the performance of the stock markets, and COVID-19 was one such event for which the researchers have used this methodology to assess the impact of COVID-19 on the performance of different indices of different economies across the globe (He et al., 2020a; Kumar et al., 2021; Joshipura & Lamba, 2023).

The method assumes that when the event occurs and if it has relevant implications for the underlying stocks and indices of an economy, the markets react either in a positive or negative direction and generate abnormal returns (Klein & Rosenfeld, 1987). The significant abnormal returns indicate that the event has impacted the underlying stocks and indices significantly. To compute the market expectations for the calculation of the abnormal returns, the event study method relies on the market models, and the difference between the expected returns and the actual returns is termed the abnormal returns. The study sample data is divided into an estimation window and a testing window. December 7, 2022, the date of the announcement of the withdrawal of the zero-COVID policy by the Chinese government, is considered the event day of the study.

As part of the event study approach, the sample data is divided into two windows known as the estimation window and the testing window. The date of the announcement of the event is considered the event day, and the dates prior to the event day are considered the estimation window, while the dates post-event day are used as the testing window. In the present study, the announcement of the withdrawal of the zero-COVID policy was made on December 7, 2022, so this day is considered the event day for the present study. The sample period selected prior to this date is considered as the estimation window while the period considered after this date is termed as the testing window. The explanation of the different sample

periods considered for the estimation and testing windows are as follows.

The sample period of June 1, 2022 through October 25, 2022 is considered the estimation window of the study, where the study tries to estimate the expected returns using the market models. The period of October 26, 2022 through January 19, 2023 is considered the testing window of the study, where October 26 is 30 days prior to the event day and January 19 is 30 days after the event day. The study uses the following equation to assess the expectations of Chinese investors in different sectoral indices:

$$R_{i,t} = \alpha_{i,t} + \beta_{i,t} RMKT_{i,t}, \quad (1)$$

where $R_{i,t}$ represents the returns of the 18 sample sectoral indices selected for the study, while the $RMKT_{i,t}$ represents the returns of the SZSE returns for the sample period. To compute the abnormal returns, the following equation is used:

$$AR_{i,t} = R_{i,t} - (\alpha_{i,t} + \beta_{i,t} RMKT_{i,t}), \quad (2)$$

where $AR_{i,t}$ represents the abnormal returns estimated for each day during the event window. The abnormal return is the difference between the actual returns and the normal returns estimated from the market model.

The cumulative abnormal returns are estimated by adding the abnormal returns from the event windows.

$$CAR_{i(t1, t2, \dots, tn)} = \sum_{t=t1}^{t=tn} AR_{i,t}, \quad (3)$$

where $CAR_{i(t1, t2, \dots, tn)}$ is the cumulative abnormal returns estimated for the event window. The event windows considered for the study are (0, +1), (0, +3), (0, +5), (0, +10), (0, +20), (0, +30), (-1, 0), (3, 0), (5, 0), (10, 0), (20, 0), and (30, 0). For (0, +1), the abnormal returns of the event day (0) and one day after the event date +1 are added. To see a long-term view on the stock market performance, the study also considers the (+1, -1), (+3, -3), (+5, -5), (+10, -10), (+20, -20), and (+30, -30) event windows. To assess the significance of the cumulative abnormal returns, the t-statistics are computed using the following formula:

$$t_{CAR} = \frac{CAR_t}{S_{CAR}} \sqrt{N}, \tag{4}$$

where t_{CAR} is the t-statistics of cumulative abnormal returns, the cumulative abnormal returns for the t -time period, and the standard deviation of cumulative abnormal returns. N is the number of observations in the estimation window.

3. RESULTS

With the withdrawal of the zero-COVID policy by the Chinese government, it is expected to generate various opportunities for different sectors of the

economy. To assess the impact of the withdrawal of this policy on the sectoral performance of stocks in China, the event study method is used. The results of the study clearly show that with the withdrawal of the zero-COVID policy by the Chinese government, the reaction of investors has been optimistic, as different sectors are reporting either positive reactions in stock price movement or no reaction. The positive reaction was reported by consumer staples, the financial sector, real estate, media, and culture sectors, while sectors such as consumer discretionary, energy, healthcare, information technology, manufacturing, mining, technology, telecom, transportation, utilities, wholesale, and retail have not shown any reactions.

Table 1. Abnormal returns and t-statistics of different sectors of China pre-event to event and event to post-event (withdrawal of zero-COVID policy)

Sector	(0, +1)	(0, +3)	(0, +5)	(0, +10)	(0, +20)	(0, +30)	(-1,0)	(-3,0)	(-5,0)	(-10,0)	(-20,0)	(-30,0)
Construction	-0.009	-0.026	-0.028	-0.045	-0.037	-0.071	-0.034*	0.001	-0.024	0.010	0.039	0.057
	-0.489	-0.981	-0.846	-1.026	-0.604	-0.957	-1.806	0.046	-0.751	0.219	0.643	0.769
Consumer Discretionary	0.016	0.017	0.028	0.031	0.047	0.038	0.009	0.018	0.034	0.056	0.082	0.102
	0.891	0.691	0.898	0.744	0.818	0.547	0.525	0.726	1.101	1.356	1.435	1.463
Consumer Staple	-0.007	-0.002	0.041	0.022	0.052	0.075	0.020	0.036	0.057*	0.071*	0.074	0.055
	-0.364	-0.067	1.338	0.523	0.904	1.072	1.129	1.409	1.856	1.698	1.274	0.777
Culture	0.005	-0.004	0.013	0.000	0.047	0.037	-0.008	0.005	0.007	0.020	0.068	0.125*
	0.272	-0.157	0.413	0.007	0.773	0.500	-0.413	0.171	0.206	0.449	1.118	1.694
Energy	-0.021	-0.033	-0.022	-0.050	-0.088	-0.060	-0.033	-0.020	-0.024	0.009	0.012	0.012
	-0.882	-0.960	-0.527	-0.872	-1.120	-0.626	-1.376	-0.594	-0.567	0.164	0.147	0.130
Financial	-0.011	-0.027	-0.015	-0.026	0.006	0.049	-0.024	0.007	-0.001	0.052	0.123**	0.137*
	-0.584	-0.991	-0.445	-0.591	0.094	0.652	-1.256	0.270	-0.032	1.165	1.991	1.821
Healthcare	0.007	0.015	0.006	-0.007	0.028	0.020	-0.007	-0.018	-0.036	-0.042	-0.021	-0.018
	0.326	0.491	0.150	-0.133	0.387	0.226	-0.332	-0.590	-0.935	-0.808	-0.293	-0.207
Hotel	0.035	0.063	0.185***	0.373***	0.370***	0.188	0.044	0.030	-0.012	0.038	0.042	0.182
	1.038	1.335	3.187	4.746	3.405	1.422	1.299	0.631	-0.205	0.477	0.386	1.381
IT	-0.018	-0.018	-0.030	-0.049	-0.001	-0.031	-0.022	-0.008	-0.005	-0.041	-0.024	0.034
	-0.909	-0.630	-0.861	-1.054	-0.012	-0.394	-1.104	-0.302	-0.143	-0.882	-0.372	0.430
Manufacturing	0.000	0.002	-0.004	-0.004	-0.024	-0.038	-0.002	-0.004	-0.008	-0.021	-0.034	-0.042
	-0.014	0.061	-0.120	-0.097	-0.397	-0.532	-0.091	-0.151	-0.253	-0.493	-0.576	-0.582
Media	0.012	-0.007	0.037	0.029	0.093	0.049	0.004	0.024	0.025	0.064	0.100	0.217***
	0.591	-0.219	1.021	0.590	1.365	0.590	0.192	0.804	0.685	1.300	1.468	2.624
Mining	-0.013	-0.030	-0.020	-0.052	-0.102	-0.101	-0.019	-0.036	-0.040	-0.024	-0.071	-0.007
	-0.571	-0.942	-0.508	-0.985	-1.385	-1.132	-0.834	-1.127	-1.014	-0.453	-0.967	-0.075
Real Estate	0.002	-0.011	-0.014	-0.031	-0.010	-0.044	-0.030	-0.037	-0.062*	0.058	0.140**	0.120
	0.103	-0.356	-0.364	-0.602	-0.147	-0.505	-1.355	-1.185	-1.642	1.134	1.974	1.389
Technology	-0.019	-0.004	-0.017	-0.017	-0.020	-0.028	-0.007	-0.010	-0.013	-0.046	-0.032	-0.026
	-0.975	-0.161	-0.493	-0.370	-0.313	-0.361	-0.337	-0.366	-0.378	-0.993	-0.505	-0.336
Telecom	-0.019	-0.015	-0.021	-0.036	-0.007	-0.035	-0.023	-0.010	-0.016	-0.050	-0.018	0.020
	-0.976	-0.522	-0.623	-0.764	-0.117	-0.454	-1.162	-0.358	-0.463	-1.068	-0.287	0.251
Transportation	0.014	-0.005	0.035	0.028	0.022	-0.015	0.028	0.044	0.052	0.069	0.094	0.053
	0.692	-0.162	1.007	0.592	0.343	-0.187	1.387	1.533	1.480	1.463	1.432	0.666
Utilities	-0.015	-0.036	-0.037	-0.035	-0.026	-0.085	-0.029	-0.025	-0.041	-0.015	0.011	-0.021
	-0.715	-1.257	-1.038	-0.742	-0.395	-1.054	-1.397	-0.875	-1.163	-0.307	0.164	-0.263
Wholesale and Retail	0.010	0.003	0.007	-0.013	-0.014	-0.051	-0.004	0.014	0.015	0.021	0.034	0.040
	0.556	0.107	0.240	-0.300	-0.248	-0.721	-0.246	0.560	0.491	0.509	0.581	0.567

Note: ***, ** and * show significance at the 99%, 95% and 90% significance levels, respectively. For each sector, the CAAR is reported followed by t-statistics in the immediately below cell.

This behavior in the Chinese stock market is opposite of what was observed when the outbreak of the COVID-19 happened in China, where all sectors except the retail and wholesale sectors reported negative reactions (He et al., 2020a). The detailed analysis of the results is provided in the subsequent discussion.

Table 1 shows the cumulative abnormal returns of eighteen sectors of the Chinese economy for the one, three, five, ten, twenty, and thirty days prior to and following the withdrawal of the zero-COVID policy by the Chinese government. The results

indicate that the hotel industry in China has reacted positively to the withdrawal of the zero-COVID policy and reported CAAR of 0.185 (t-value: 3.187), 0.373 (t-value: 4.746), and 0.370 (t-value: 3.405) after five days (0, +5), ten days (0, +10), and twenty days (0, +20) after the event. This demonstrates that investors in the hotel industry welcomed the announcement of the change in the zero-COVID policy, resulting in returns of 18.5%, 37.3%, and 37% from the day of announcement to a five-day, ten-day, and twenty-day window. The analysis of the CAAR generated from the -1, -3, -5, -10, -20, and -30 days with the event date of December 7

Table 2. Abnormal returns and t-statistics of different sectors of China pre-event to post-event windows (withdrawal of zero-COVID policy)

Sector	(+1, -1)	(+3, -3)	(+5, -5)	(+10, -10)	(+20, -20)	(+30, -30)
Construction	-0.033	-0.014	-0.042	-0.025	0.013	0.001
	-1.419	-0.409	-0.942	-0.412	0.174	0.011
Consumer Discretionary	0.016	0.027	0.052	0.078	0.121*	0.128
	0.748	0.803	1.263	1.365	1.727	1.308
Consumer Staple	0.012	0.032	0.098**	0.092	0.125*	0.124
	0.560	0.971	2.325	1.583	1.772	1.251
Culture	-0.003	0.000	0.019	0.019	0.114	0.173*
	-0.142	-0.007	0.443	0.320	1.548	1.675
Energy	-0.037	-0.036	-0.028	-0.023	-0.059	-0.032
	-1.243	-0.782	-0.494	-0.286	-0.614	-0.238
Financial	-0.020	-0.004	-0.001	0.041	0.143725*	0.206**
	-0.857	-0.123	-0.015	0.659	1.917	1.958
Healthcare	-0.003	-0.006	-0.033	-0.052	0.003	0.009
	-0.125	-0.154	-0.642	-0.727	0.040	0.078
Hotel	0.055	0.070	0.150*	0.388***	0.388***	0.281
	1.330	1.108	1.901	3.562	2.941	1.515
IT	-0.034	-0.021	-0.029	-0.084	-0.019	0.021
	-1.416	-0.556	-0.622	-1.315	-0.245	0.191
Manufacturing	-0.003	-0.003	-0.013	-0.026	-0.059	-0.085
	-0.134	-0.099	-0.301	-0.445	-0.816	-0.843
Media	0.006	0.007	0.051	0.083	0.182**	0.261**
	0.222	0.169	1.042	1.210	2.201	2.249
Mining	-0.026	-0.060	-0.054	-0.070	-0.166*	-0.108
	-0.936	-1.426	-1.014	-0.960	-1.870	-0.861
Real Estate	-0.011	-0.031	-0.059	0.044	0.147*	0.095
	-0.398	-0.757	-1.156	0.621	1.698	0.788
Technology	-0.017	-0.006	-0.021	-0.054	-0.043	-0.032
	-0.711	-0.162	-0.455	-0.851	-0.561	-0.297
Telecom	-0.030	-0.012	-0.025	-0.073	-0.013	0.000
	-1.231	-0.328	-0.533	-1.131	-0.172	-0.004
Transportation	0.031	0.028	0.076	0.086	0.105	0.023
	1.253	0.746	1.604	1.319	1.323	0.206
Utilities	-0.034	-0.052	-0.068	-0.041	-0.006	-0.109
	-1.350	-1.366	-1.430	-0.617	-0.073	-0.971
Wholesale and Retail	0.001	0.012	0.018	0.004	0.015	-0.027
	0.040	0.365	0.429	0.071	0.208	-0.275

Note: ***, ** and * show significance at the 99%, 95% and 90% significance levels, respectively. For each sector, the CAAR is reported followed by t-statistics in the immediately below cell.

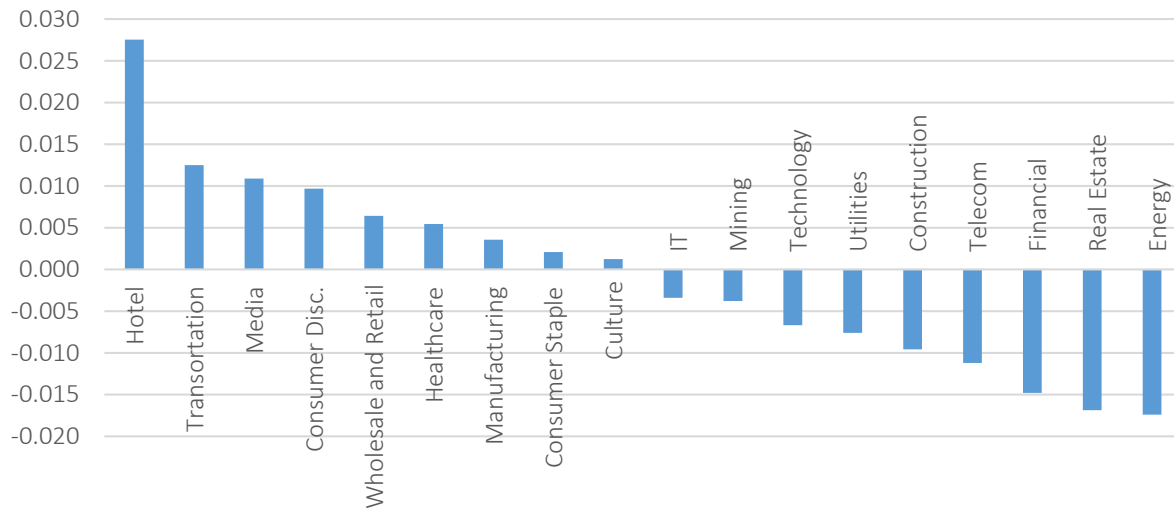


Figure 1. Average stock price changes for different sectors

shows that the sectors such as consumer staples, the financial sector, real estate, media, and culture have reacted positively to the event, as the CAAR was positive and significant. The CAAR for consumer staple is 5.7% for five days prior to the event window, for the financial sector, it is 12.3% and 13.7% for twenty and thirty days prior, respectively; and for media and culture, it is 21.7% and 12.5%, respectively, for thirty days prior. The construction sector reacted negatively to the event for one day prior to the event. The mixed results were seen in the real estate sector, where for five days prior to the event window, the sector reacted negatively, while for the longer duration of the estimation window, the reaction turned out to be positive after the five-day window. For other sectors such as consumer discretionary, energy, healthcare, information technology, manufacturing, mining, technology, telecom, transportation, utilities, wholesale, and retail, the market reaction was insignificant. The CAAR computed for these sectors for the event window is not significant. These results are indicating that when the COVID-19 outbreak happened in China, the different sectors of the economy reacted negatively except the retail and wholesale sectors (He et al., 2020a), while with the withdrawal of the zero-COVID policy by the Chinese government, the reaction of investors is optimistic as different sectors are reporting either positive reactions in the stock price movement or no reaction. The negative reaction was only there in the case of construction and real estate, which was also not very significant after the event date.

Different studies in the literature have suggested using longer and equally spaced event windows prior and post to the event window (Joshipura & Lamba, 2023). The study also tries to assess the significance of CAAR for the (+1, -1), (+3, -3), (+5, -5), (+10, -10), (+20, -20), and (+30, -30) event windows. The results of these event windows for the different parts of the Chinese economy are shown in Table 2. The results show that for the event window five days prior and post-event, the consumer staples (9.8%) and hotel industries (15%) have reported a significant positive CAAR. The hotel industry's CAAR was significant and positive for the ten-day and twenty-day prior and post-event windows. In the case of twenty days after the event, consumer discretionary (12.1%), consumer staples (12.5%), financial (14.3%), media (18.2%), and real estate (14.7%) reported the significant CAAR. Apart from the media, the sectors that reported significant positive CAAR were culture and financial for the thirty days prior to and following the announcement of the withdrawal of the zero-COVID policy in China.

The study also tries to assess the changes in the average stock price of different sectors of the Chinese economy on the event day. Based on the positive and negative movement of the stock prices, the sectors were divided into three categories, such as sectors with positive impact, sectors with negative impact, and sectors that were less affected. The sectors hotel, transportation, media, consumer discretionary, wholesale, and retail had high stock prices and positive stock price movement, while

the sectors utilities, construction, telecom, financial, real estate, and energy had high stock prices and negative stock price movement. The sectors including healthcare, manufacturing, consumer staples, culture, IT, mining, and technology are considered to be the least affected in terms of average stock price movement due to the announcement of the withdrawal of the zero-Covid policy (refer Figure 1).

4. DISCUSSION

The zero-COVID policy in China was aimed at preventing the spread of COVID-19 within the country by implementing strict measures such as lockdowns, mass testing, and contact tracing. While this policy has been effective in controlling the spread of the virus, it has also had a significant impact on every industry in the country. With the withdrawal of significant provisions of the zero-COVID policy, there are fewer restrictions left and as result of same, the hotel industry in China has shown significant positive movements. Domestic tourism has been the main source of revenue for hotels in China since international travel has been heavily restricted, and any changes that encourage people to travel domestically would certainly boost the hotel industry.

In this study, we found that the hotel industry is growing steadily after withdrawal of zero-COVID policy. This could mean that more people want to stay in hotels and travel. This could be because of a number of things, like the rollout of the vaccine, better public health measures, and an overall improvement in the COVID-19 situation. As more people are vaccinated and restrictions are lifted, individuals may feel more comfortable traveling and staying in hotels. Also, the hotel industry may have changed because of the pandemic by putting in place new health and safety rules to make sure that guests feel safe and secure while staying there. This could mean doing more to clean and keep things clean, as well as taking steps to keep people apart and using contactless technology. Investors may also view the hotel industry's growth as a sign of the broader economic recovery. As travel and tourism pick up again, it could mean that consumer confidence is getting better and that the economy as a whole is getting back on its feet after the pandemic.

During the investigation, it was also found that some sectors, like consumer staples, the financial sector, real estate, the media, and culture, were doing well even before the zero-COVID policy was taken away. It could be a sign that investors have confidence in the overall economic recovery and believe that these sectors are well-positioned to benefit from it. Consumer staple companies usually make and sell things that people need no matter what the economy is like, such as food, drinks, and household items. These companies tend to be more defensive, which means that economic downturns don't hurt them as much. If companies that make essential products for consumers are doing well, it could mean that people are spending more on these products, which could be good for the economy. The financial sector includes banks, insurance companies, and other financial institutions. The sector is typically sensitive to changes in interest rates and economic conditions. If the financial sector is performing well, it could indicate that investors are optimistic about the economy and believe that interest rates will remain low, which could benefit banks and other financial institutions. One of the important sectors of any economy is real estate, which includes companies that invest in and develop properties, such as commercial and residential real estate. Real estate companies can benefit from a growing economy and low interest rates, as well as increased demand for properties. If the real estate sector is performing well, it could indicate that investors are optimistic about the economic recovery and believe that the demand for properties will continue to increase. The positive response of the media and culture sector indicates that consumers may have more disposable income to spend on entertainment. If the media and culture sector is performing well, it could indicate that investors in this sector are also optimistic about the economic recovery and believe that consumers will continue to spend on entertainment.

We got a negative reaction to the construction sector initially, one day prior to the event. It must be understood that the construction sector can be affected by a variety of factors, including changes in government policies, economic conditions, and consumer demand. So, it is important to think about the bigger picture of how the COVID policy changed and how it might have affected the construction industry.

It's also possible that the initial negative response came from industry stakeholders who didn't know how to deal with the new policy changes or how the pandemic would continue to change. Over time, as more information became available and businesses adjusted to the new policies, the sector may have become more confident and responsive. Overall, it is important to look at the specific factors that may have contributed to the negative response and subsequent recovery in the construction sector and to consider how these factors might continue to impact the industry in the future.

The withdrawal of the zero-COVID policy could indicate that the Chinese government is willing to prioritize economic growth over strict COVID-19

containment measures. This may be seen as a positive development by investors who are eager for the Chinese economy to return to pre-pandemic levels. This also suggests that the Chinese government has greater confidence in its ability to manage COVID-19 outbreaks and prevent the spread of the virus. This may reassure investors who were previously concerned about the potential impact of COVID-19 on Chinese businesses and markets. Additionally, the optimistic reaction of investors could reflect a broader trend of improving economic conditions in China and the global economy. As the pandemic recedes in some regions and vaccination rates increase, investors may be more confident in the outlook for Chinese companies and markets.

CONCLUSION

The Zero-COVID policy was a strict approach adopted by the Chinese government to contain the spread of COVID-19 within its borders. The policy involved strict lockdowns, mass testing, contact tracing, and quarantining of infected individuals, which helped China to largely contain the virus and maintain low infection rates. However, in December 2022, the Chinese government modified its Zero-COVID policy to allow for a more targeted approach that balances virus containment with economic activity. The modified policy allows local authorities to use more localized and less severe measures to contain outbreaks, rather than implementing strict lockdowns across entire regions. This withdrawal of the zero-COVID policy by the Chinese government has practical implications for investors as it signals that the Chinese economy is expected to continue to recover and grow. The more targeted approach to containing outbreaks reduces the risk of widespread lockdowns and disruptions to economic activity. As a result, the reaction of investors to the modified policy has been optimistic, with stocks in Chinese companies and the Chinese economy as a whole seeing gains. Investors are also optimistic about the potential for increased trade and economic activity with China as the country continues to recover and reopen.

Investors in most areas have been optimistic because they think this approach will keep the economy from being too disrupted and prevent a lot of businesses from closing. Tourism, hospitality, and retail, which have been hit hard by the pandemic, may benefit from the government's more targeted approach, which allows for more targeted measures that can lessen the impact on these industries. Overall, the modified zero-COVID policy is seen as a more pragmatic and flexible approach that balances the need to control the pandemic with the need to keep the economy functioning. The response of investors reflects this sentiment, with many expecting that the new approach will help stabilize the economy and support long-term growth.

AUTHOR CONTRIBUTIONS

Conceptualization: Prashant Sharma, Surender Kumar.

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Data curation: Prashant Sharma.

Formal analysis: Surender Kumar.

Methodology: Prashant Sharma.

Software: Prashant Sharma.
 Supervision: Surender Kumar.
 Validation: Surender Kumar.
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 Writing – review & editing: Prashant Sharma.

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